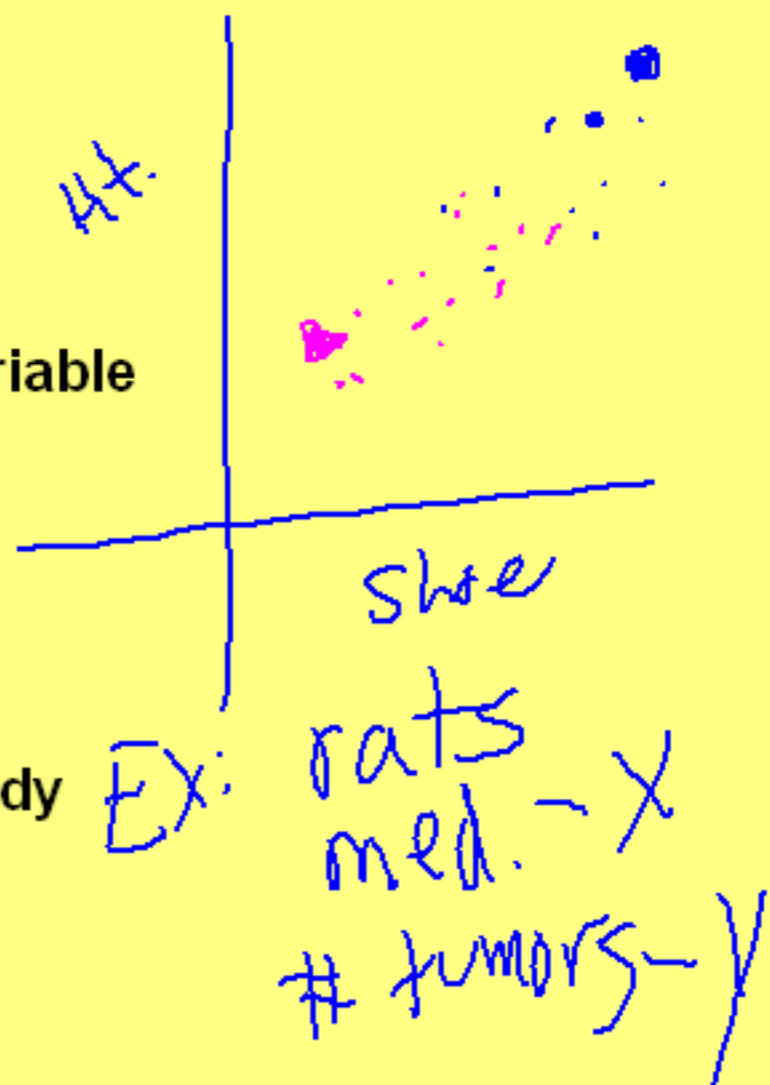


## Scatterplots

### Notes:

- Shows the relationship between 2 quantitative variables
- Can show categorical variables by ① diff. shapes / colors
- Individuals are represented by the points on the plot (duplicates)
- Explanatory Variable:
  - On the X axis
  - Explains or causes the change in the Y variable
- Response Variable:
  - On the Y axis
  - Measures the outcome of an experiment or study



# Interpreting Scatterplots:

Distr - Shape, center, spread

## Overall pattern

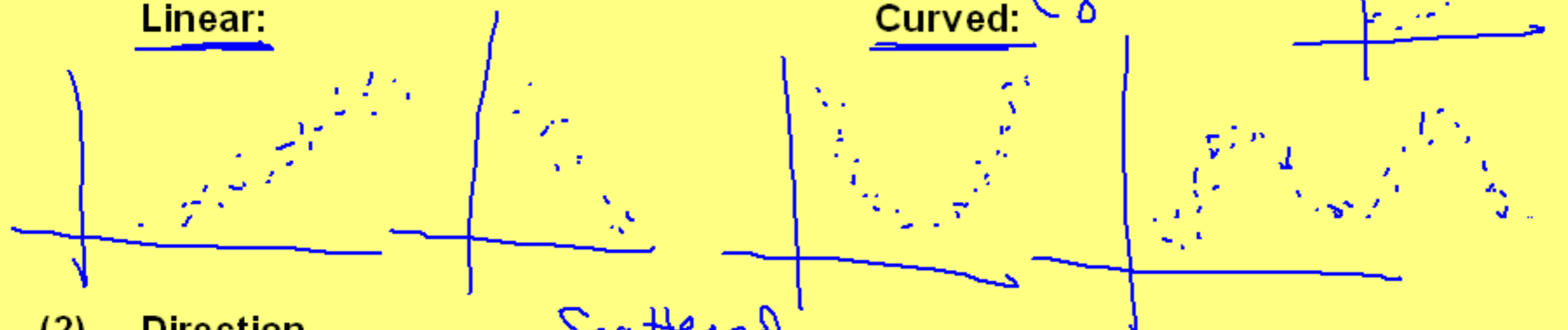
- Get a sense of what the data/plot looks like in general, then comment on the following 3 things

(1) Form  
Linear:

Scattered

Curved:

(generic)



(2) Direction  
Negative Association

Scattered

Positive Association



## Strength-

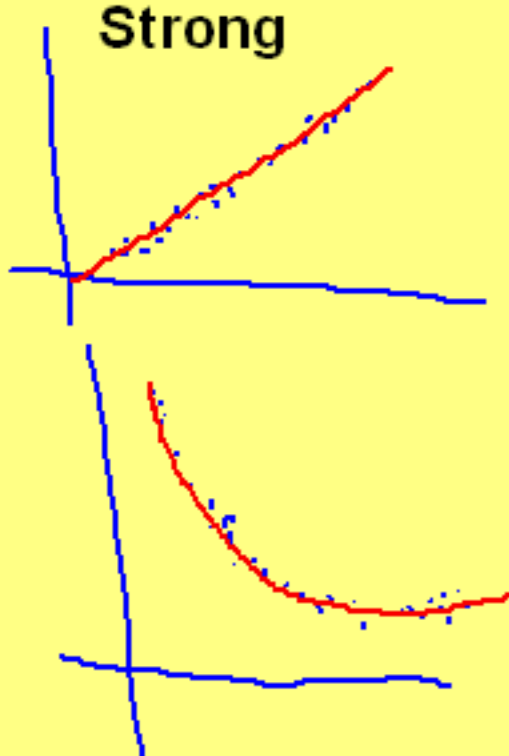
③ - How closely the pts. follow a simple form (linear or curve)  
- Use the following words (or combinations of these):

- weak
- moderate
- strong
- scattered

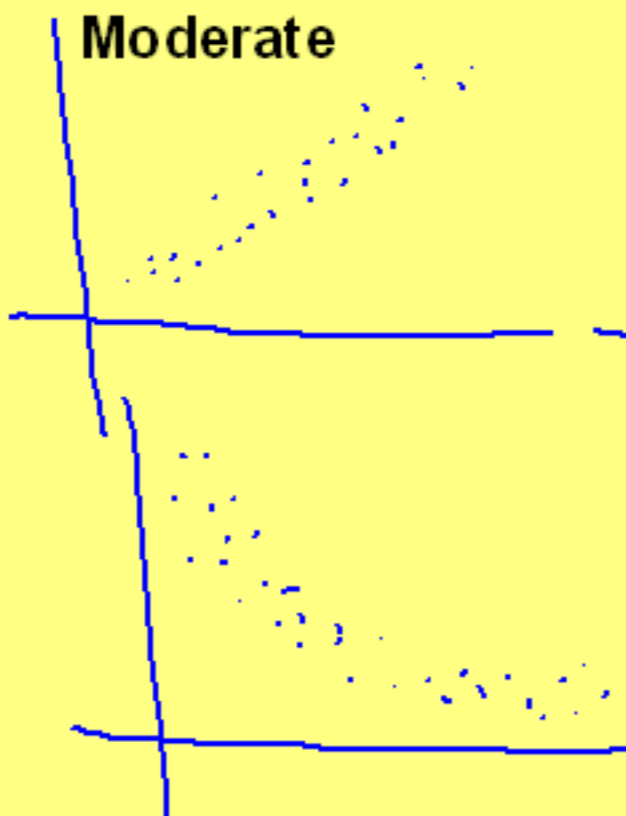
moderately strong

Examples:

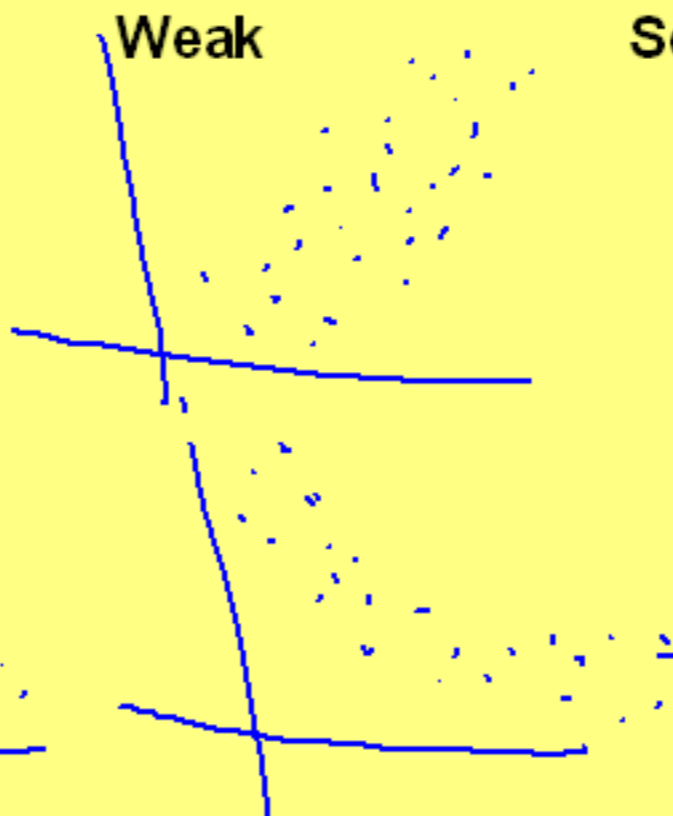
Strong



Moderate



Weak



Scattered



## Examples: Describing Scatterplots

1) Curved  
(mod.) strong  
+ assoc.  
(w/ neg from  $x = -$  to  $+$ )  
\* cluster

2) negative  
linear  
strong

3) positive  
mod. strong  
linear  
\* outlier

\* You try the next 4 examples

\* Now complete worksheet 2.1

## Worksheet 2.1- ANSWERS

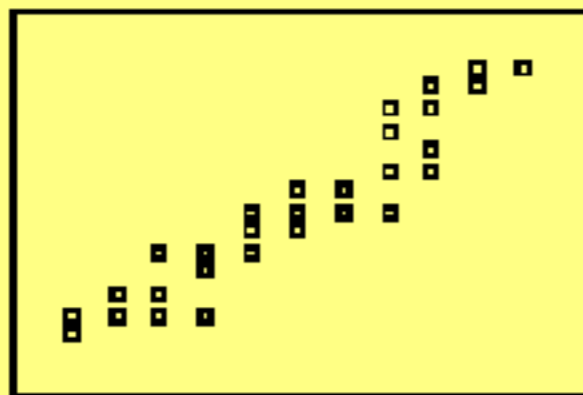
① Chart:

	Strong	Mod	Weak
-	C	D	F
+	E	A	B

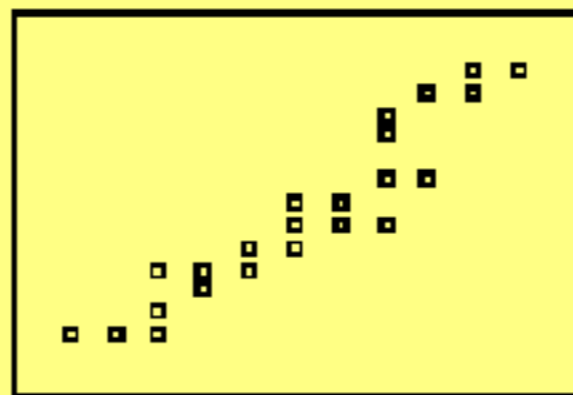
- ②
- |                   |                   |
|-------------------|-------------------|
| a) +, strong      | f) -, mod.        |
| b) +, mod. strong | g) +, strong      |
| c) Scattered      | h) +, mod. strong |
| d) +, mod.        |                   |
| e) -, strong      |                   |

WHAT PLOT HAS THE STRONGER RELATIONSHIP? BY HOW MUCH??

A



B



**Correlation:**

**Symbol:**

**Definition:**

**Formula:**

- ~~Grouping/ Ungrouping~~
- ~~How to make scatterplots on the calculator~~
- ~~Deleting a point from a list~~
- Using the program CORR

**CORRELATION COEFFICIENT: the last few notes....**

## COEFFICIENT OF DETERMINATION:

What it is?

How do we interpret it?